

Rolling Knolls Landfill Settling Parties

Addendum 1 to the Data Gaps Sampling and Analysis Plan

Rolling Knolls Landfill Superfund Site

Chatham, New Jersey

April 2015



A handwritten signature in black ink that reads "John Persico".

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Suzanne Walls
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Andrew Guthertz
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Sampling and Analysis Plan**

Rolling Knolls Landfill Superfund
Site
Chatham, New Jersey

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Rolling Knolls Landfill Settling Parties

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Acronyms and Abbreviations

Agreement	Administrative Settlement Agreement and Order on Consent
ARCADIS	ARCADIS U.S., Inc.
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COCs	Constituents of Concern/Chemicals of Concern
CLP	Contract Laboratory Program
Data Gaps SAP	Data Gaps Sampling and Analysis Plan
GPS	global positioning satellite
GSNWR	Great Swamp National Wildlife Refuge
OCP	organochlorine pesticide
PPNDP	passively placed narrow diameter points
PCB	polychlorinated biphenyl
PID	photoionization detector
QA	quality assurance
QAPP	Quality Assurance Project Plan
SCSR	Site Characterization Summary Report
site	Rolling Knolls Landfill Superfund Site, located in Chatham Township, New Jersey
SOP	Standard Operating Procedure
SRS	Soil Remediation Standard
TestAmerica	TestAmerica Laboratories, Inc.

the Group	Chevron Environmental Management Company, Lucent Technologies Inc., (now known as Alcatel-Lucent USA Inc.) and Novartis Pharmaceuticals Corporation
TOC	total organic carbon
USEPA	United States Environmental Protection Agency
USFWS	United States Fish & Wildlife Service



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1. Introduction

On behalf of Chevron Environmental Management Company for itself and on behalf of Kewanee Industries, Inc., Lucent Technologies Inc., (now known as Alcatel-Lucent USA Inc.) and Novartis Pharmaceuticals Corporation (collectively, the Group), ARCADIS U.S., Inc. (ARCADIS) prepared this Addendum 1 to the Data Gaps Sampling and Analysis Plan (Data Gaps SAP) for the Rolling Knolls Landfill Superfund Site (the "site"), located in Chatham Township, New Jersey. The location of the site is shown in Figure 1, and the site features are shown in Figure 2.

The Data Gaps SAP was submitted to USEPA on 17 September 2014 and approved by USEPA on 18 November 2014 (ARCADIS 2014a). Collection and analysis of soil and sediment samples proposed in the Data Gaps SAP was conducted from November 2014 to March 2015. This addendum proposes additional soil and sediment sampling to delineate constituents of concern/chemicals of concern (COCs) detected in samples collected during the initial Data Gaps SAP implementation. Information that was included in the approved November 2014 Data Gaps SAP that is not directly relevant to the proposed new sampling actions is not repeated in this addendum.

1.1 Objectives

The objectives of the sampling proposed herein is to address data gap concerns posed by the USEPA in their April 6, 2015 email - email from Ms. Tanya Mitchell of USEPA to Ms. Suzanne Walls of ARCADIS. The sampling effort will complete delineation of polychlorinated biphenyls (PCBs) and/or metals detected in certain soil and sediment samples collected between November 2014 and March 2015.

The planned sampling locations are as proposed by the USEPA in the referenced April 6, 2015 email. In addition, the Group is proposing additional delineation sampling to that requested by USEPA. This addendum contains the sampling proposed by both the USEPA and the Group.

1.2 Data Gaps SAP Organization

This Data Gaps SAP is organized as described below.

- Section 2, Additional Soil and Sediment Sampling, presents each new task that will be conducted as part of the Data Gaps SAP and outlines proposed technical activities that will be conducted to complete each task.



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- Section 3, Schedule, presents a schedule for the Data Gaps SAP activities.
- Section 4, Project Management, introduces the project team and describes the responsibilities of each project team member.
- Section 5, References, provides references used in the development of this Addendum 1 to the Data Gaps SAP.

A Quality Assurance Project Plan (QAPP), submitted on 19 September 2014 and approved by the USEPA on 18 December 2014 (ARCADIS 2014b), provides supporting information on site conditions, sampling requirements and procedures, and laboratory analytical procedures. Certain worksheets in the QAPP have been revised to accompany this addendum. These include:

- Worksheet 18 – Sampling Locations and Methods; and
- Worksheet 20 – Field QC Summary.

These revised worksheets are submitted as Addendum 1 to the QAPP.

2. Additional Soil and Sediment Sampling

2.1 Soil Sampling

2.1.1 Soil Sample Locations

The proposed soil sampling locations are shown on Figures 3a through 3d, along with previous surface soil sample results that were used to select the proposed locations. Soil sampling locations (sample numbers SS-165 through SS-174) are located off the boundary of the landfill in native soil, near where previous soil samples contained concentrations of one or more COCs exceeding its New Jersey Soil Remediation Standard (SRS). Proposed locations are also summarized in Table 1. All locations are in potentially wet areas and are expected to consist of wetland soil. However, if these locations are below water, they will be designated sediment samples and will be collected using sediment sampling techniques (see Section 2.2).

2.1.2 Soil Sampling Procedures

ARCADIS field personnel will advance soil borings to collect surface soil samples using a hand-driven Macrocore[®]. At each sampling location, field personnel will use hand tools (e.g., slide-hammer) to advance a 2-inch-diameter by 2-foot-long stainless steel Macrocore[®] fitted with a dedicated acetate liner to 1 foot below ground surface (bgs). The Macrocore[®] cutting shoe may be equipped with a disposable, plastic basket to increase recovery of loose material. Other sampling methods (e.g., hand auger, shovel) may be used to collect soil samples if conditions at a proposed sampling location do not allow for advancement of or adequate recovery with a hand-driven Macrocore[®].

After the Macrocore[®] is advanced to the specified depth, field personnel will carefully extract the Macrocore[®] from the borehole to minimize soil loss, remove the acetate liner containing the soil core from the Macrocore[®], cut the acetate liner open, and photograph the soil core. Field personnel will record the length of each recovered soil core in a field log book then score the soil core at 6-inch intervals and field screen with a photoionization detector (PID). PID readings will be recorded in a field log book. If other sampling methods are required to collect soil, field personnel will attempt to remove a volume of soil approximately 1 foot long and 3 to 6 inches thick from the surface interval (i.e., 0.0 to 1.0 foot bgs), while attempting to minimize soil disturbance. Field personnel will process this soil volume in the same manner as a soil core contained in a Macrocore[®] acetate liner, as described above.

The soil's physical characteristics and other relevant visual observations will be recorded in a field log book. When soil characterization is complete, a composite sample will be collected from the remaining soil in the soil core. Surface soil samples will be collected using decontaminated, non-dedicated stainless steel hand-tools (e.g., spoons, scoops or trowels) and bowls. Field personnel will place surface soil samples in laboratory-supplied containers. Field personnel will document, label, package and ship soil samples in accordance with procedures provided in Worksheet #21 of the QAPP (ARCADIS 2014b). Non-disposable sample equipment (e.g., stainless steel bowls and spoons, Macrocore[®], hand-auger, shovel) will be decontaminated between uses at subsequent sampling locations in accordance with the Equipment Decontamination Standard Operating Procedure (SOP) presented in the QAPP (ARCADIS 2014b).

Field personnel will advance the Macrocore[®] or other hand tool to 1 foot bgs until adequate sample volume is obtained or until it is determined that a surface soil sample cannot be collected due to lack of soil at a sampling location. Field personnel will advance the Macrocore[®] or other hand tool a maximum of four times within 5 to 10 feet of each proposed sampling location in an attempt to obtain adequate sample volume. If adequate sample volume cannot be obtained after four attempts, the sampling area will be widened until adequate sample volume has been obtained.

Some sampling will take place in potential bog turtle habitat. Field personnel conducting sampling activities in potential bog turtle habitat will implement USFWS-recommended conservation measures as described in Section 3.1.1 of the Data Gaps SAP (ARCADIS 2014a).

The locations of all soil samples will be recorded by ARCADIS using a GPS unit.

2.1.3 Soil Sample Analyses

Soil samples will be analyzed for the COCs outlined in Table 1. All of the proposed soil samples are off the boundary of the landfill in native soil. Since the purpose of these samples is to delineate the extent of COCs detected during implementation of the Data Gaps SAP, and the prior sampling (including the Data Gaps SAP and other sampling discussed in the Site Characterization Summary Report) has identified the COCs at the site, the proposed analyses include only PCBs and/or selected metals as appropriate. Previous site sampling has characterized and delineated the remaining TCL/TAL parameters.

Sample analyses for SS-173 and SS-174 will be held as contingent samples until results from SD-48 and SD-49 have been reviewed. If results from SD-48 and SD-49 indicate a connection to the landfill, SS-173 and SS-174 will be analyzed to further evaluate this connection.

2.2 Sediment Sampling

2.2.1 Sediment Sample Locations

The proposed sediment sampling locations (locations SD-45 through SD-50) are shown on Figures 3a through 3d, and are summarized in Table 1. The order of sampling will be from downstream to upstream locations. The position of sample locations may be adjusted based on accessibility or on other information gathered during field activities.

2.2.2 Sediment Sampling Procedures

Sediment samples will be collected in accordance with sampling procedures developed based on USEPA, USEPA ERT, and NJDEP sediment sample collection guidance documents (USEPA 1995, 1994; NJDEP 2005, 1998).

Sediment samples will be collected by advancing a dedicated Lexan[®] coring device or stainless steel Macrocore[®] sampler equipped with a dedicated acetate liner to a minimum of 1 foot beneath the surface water/sediment interface. One of these sampling methods will be selected based on site conditions at the time of sample collection. Each sediment core will be field screened with a PID. PID readings, descriptions of the sediment's physical characteristics, and other relevant visual observations will be recorded in a field log book. Sediment in the 0.0 to 0.5-foot interval will then be homogenized and transferred directly into laboratory-supplied containers for other analytical parameters. Field personnel will document, label, package and ship sediment samples in accordance with procedures provided in Worksheet #21 of the QAPP (ARCADIS 2014b).

2.2.3 Sediment Sample Analysis

Sediment samples will be analyzed for the COCs outlined in Table 1. All of the proposed sediment samples are off the boundary of the landfill in native sediment. Since the purpose of these samples is to delineate the extent of COCs detected during implementation of the Data Gaps SAP, and the prior sampling (including the Data



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Gaps SAP and other sampling discussed in the Site Characterization Summary Report) at the site, the proposed analyses include PCBs and/or selected metals, as appropriate. Previous site sampling has characterized and delineated the remaining TCL/TAL parameters. All sediment samples will also be analyzed for pH, total organic carbon, and grain size.

Sample analysis for SD-50 will be held as a contingent sample until results from SD-49 have been reviewed. If results from SD-49 indicate a connection to the landfill, SD-50 will be analyzed to further evaluate this connection.

2.3 Analytical Procedures

All analyses will be performed by TestAmerica Laboratories, Inc. (TestAmerica) using current USEPA methods. TestAmerica is a current participant in the Contract Laboratory Program (CLP). The analytical procedures are included in Table 1. Additional information on TestAmerica and the analytical procedures is provided in the QAPP (ARCADIS 2014b).



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3. Schedule

Implementation of the proposed soil and sediment sampling program will begin within 2 weeks after USEPA's approval of this Addendum 1 to the QAPP. Sample collection will require approximately 2 weeks, and sample analyses will be completed 4 weeks after collection of the last sample. Data validation will require an additional 4 weeks. Therefore, the total time to implement this work after USEPA approval is 10 weeks. The schedule for submittal of the final report will depend on the completion of this sampling and other tasks (monitoring well installation and sampling) which are not part of this addendum. The Group will compress this schedule if sampling, laboratory analysis, and/or data validation can be completed in less time than anticipated.



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4. Project Management

4.1 Staffing

Implementation of Data Gap SAP activities will require integration of personnel from various organizations, collectively referred to as the “Project Team.” Responsibilities of each member of the project team are presented in the QAPP (ARCADIS 2014b).

A list of key project management personnel is provided below.

Company/Organization	Title	Name	Phone Number
USEPA	Remedial Project Manager	Tanya Mitchell	212-637-4362
USEPA	QA Manager	TBD	TBD
NJDEP	Case Manager	Jill McKenzie	609-292-1993
The Group	Primary Contact	Gary Fisher	908-582-5771
ARCADIS	Project Officer	John Persico	609-860-0590
ARCADIS	Project Manager	Suzanne Walls	865-777-3502
ARCADIS	QA Manager	Dennis Capria	315-446-2570

TBD – To be determined

4.2 Coordination

Personnel performing RI/FS Work Plan activities will be directed by representatives of the Project Team. A project organizational chart is provided as Figure 4.



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5. References

ARCADIS U.S., Inc. 2012. Site Characterization Summary Report.

ARCADIS U.S., Inc. 2014a. Data Gaps Sampling and Analysis Plan. November.

ARCADIS U.S., Inc. 2014b. Quality Assurance Project Plan. December.

New Jersey Department of Environmental Protection. 1998. Guidance for Sediment Quality Evaluations.

New Jersey Department of Environmental Protection. 2005. Field Sampling Procedures Manual.

USEPA. 1995. *Superfund Program Representative Sampling Guidance; Volume 5: Water and Sediment; Part 1 – Surface Water and Sediment*. Office of Emergency and Remedial Response, Office of Solid Waste and Emergency Response.

USEPA. 1994. *Sediment Sampling - SOP #: 2016*. Emergency Response Team.